

## CTER-91

# Current Transformer Excitation, Ratio and Polarity Test Set



- Can test bushing CTs mounted inside transformer or switchgear
- Saturation, ratio and polarity tests performed without changing test lead connections
- Overload and short-circuit protection

### DESCRIPTION

The CTER-91 test set is a lightweight, portable unit for performing excitation, ratio and polarity tests on current transformers using the voltage-comparison method.

Utilizing the latest technology, Model CTER-91 provides a variable voltage output and precision instrumentation for testing single and multiratio CTs. All three tests – excitation, ratio and polarity – can be performed without changing any leads.

Current transformers can be tested in their equipment configuration, such as being mounted in transformers, oil circuit breakers or switchgear.

It is necessary for the equipment to be totally isolated from the electrical system prior to testing.

### APPLICATIONS

#### Saturation Test

Model CTER-91 provides a variable voltage output and digital instrumentation for measuring the excitation voltage and excitation current that results as the voltage applied to the CT under test is increased.

As the CT under test begins to saturate, a large increase in current will be detected for a small increase in voltage.

#### Ratio Test

The ratio test is performed by comparing a voltage applied to the secondary winding to the resulting voltage produced on the primary winding.

For example, if 1 volt per turn is applied to the secondary winding, the voltage present on the primary winding would be 1 volt.

More specifically, if 120 volts were applied to the secondary of a 600/5 current transformer (120:1 ratio), 1 volt would be present on the primary winding.

#### Polarity Test

Polarity of the current transformer under test is determined by special circuitry that divides the voltage applied to the secondary winding by either 10 or 100, depending on switch position, then adds the result to the primary voltage.

An increase in magnitude indicates correct polarity, and a decrease shows incorrect polarity.

### FEATURES AND BENEFITS

- Voltmeter can be used to measure external voltages up to 600 volts ac.
- A RUN/HOLD switch freezes readings on instruments when switched to the HOLD position.
- A low range of 40 volts is provided for CTs that saturate at low voltages.
- The unit provides a high range of 1000 volts.
- A zero-start interlock is incorporated. This minimizes the possibility of energizing the CT under test with a sudden high voltage.

## SPECIFICATIONS

### Input

120 V, 1 $\phi$ , 50/60 Hz **OR** 240 V, 1 $\phi$ , 50/60 Hz

### Output

Continuously variable in four ranges:

0 to 40 V at 1.5 A max

0 to 150 V at 1.5 A max

0 to 600 V at 1.5 A max

0 to 1000 V at 1.0 A max (5 min on, 15 min off)

### Instrumentation

#### Voltmeters

Two 4½-digit, autoranging

#### Solid-state Instruments

**Ranges:** 0.0000 to 1.9999/19.999/199.99/600.0/1000 V

**Accuracy:**  $\pm 0.25\%$  of reading,  $\pm 1$  digit for 1 to 1000 V;  $\pm 1\%$  of reading  $\pm 1$  digit for 0.2 to 1 V

#### Ammeter

One 4½-digit

#### Solid-state Instrument

**Range:** 0.0000 to 1.9999 A

**Accuracy:**  $\pm 0.85\%$  of reading,  $\pm 1$  digit

### Enclosure

The unit is housed in a high-strength, molded suitcase-type enclosure with carrying handle and removable cover.

Storage space is provided for test leads.

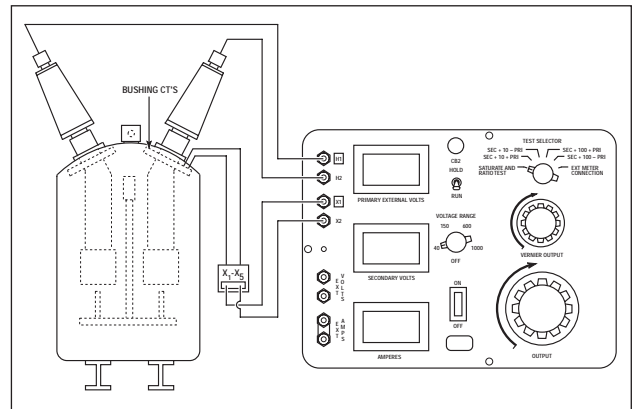
### Dimensions

9.9 H x 14.1 W x 11.9 D in.

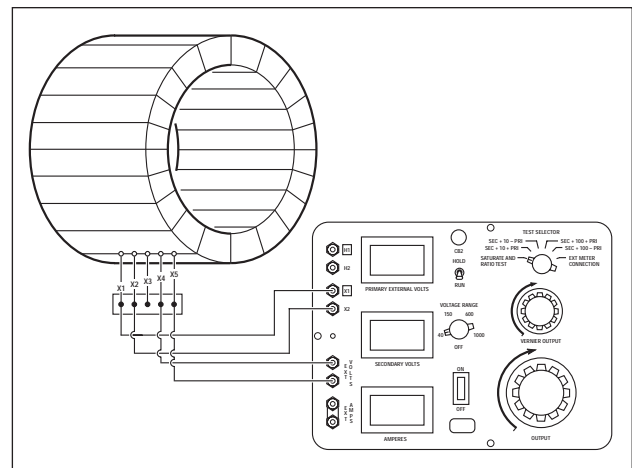
(251 H x 357 W x 287 D mm)

### Weight

37 lb (16.8 kg)



Connections for performing saturation, ratio and polarity tests



Connections for verifying ratios of a multiratio CT

## ORDERING INFORMATION

Item (Qty)	Cat. No.
Model CTER-91	
115 volt input, 50/60 Hz	CTER-91-115
230 volt input, 50/60 Hz	CTER-91-230
<b>Included Accessories</b>	
Test leads	
18 AWG, 5 ft (1.5 m) [1 pr]	1282
18 AWG, 12 ft (3.7 m) [1 pr]	2997
Line cord [1]	6828
Instruction manual [1]	14355